NUTRITION FOCUS RESEARCH

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TARGET POPULATIONS / MAIN AREAS

- WRA, PLW and Children
- HIV/TB

} >20 interventional studies

- Methods: FFQ , Tanzania Food Freq. tables

- Focus:

  Evidence based interventions improving population nutrition health,

  Pregnancy and birth outcomes

  Implementation & scale up of evidence based interventions

SELECTED STUDIES

MALARIA 1

- HSPH / MUHAS
- RCT prenatal iron (60mg) v/s placebo
- 1500 iron replete, non-anemic women, HIV negative at or < 27 wks gestation
- Primary outcomes: Placental Malaria, Hb at delivery, and Bwt.
- Key Findings: (in the context of good malaria control)

1. Risk of placental malaria not increased by maternal iron supplementation
2. Significant improvement;

    Delivery Hb 0.7 g/dl v/s 0.1g/dl

    Serum Ferritin (41.3 v/s 11.3 micrograms/L

    Decreased risk of anemia at delivery by 40%

    Reduced risk of maternal iron deficiency at delivery by 52% and IDA by 66%

MALARIA 2

- HSPH / MUHAS
- 2500 HIV negative primigravid or secundigravid pregnant women, 1st trimester
- RCT 2500 IU Vit. A, 25mg Zn, Both Vit.A and Zn, Placebo until delivery
- Primary outcomes: Placenta Malaria
- Key Findings:
  - Zn supplements lowers risk of histopathology positive malaria (RR 0.63, 95% CI 0.44,0.91)
  - No effect on PCR positive Malaria, SGA or prematurity

FOLATE STUDY

- AAPH/HKI Tanzania
- Proof of principle - mandatory food fortification program
- Large scale wheat flour folic acid fortification – folate levels among WRA in urban setting Tanzania
- Cohort of 600 WRA, urban setting, 3 sample assessments
- Key Findings:

  Baseline folate deficiency prevalence high, 26.9% (mean level 5.44ng/ml (+/- 2.3)

  Down to 5% at Month 12 (Mean change 4.27ng/ml (+/-4.18)

  1 ng/ml increases in plasma folate associated with 25% decreased risk of folate deficiency

FACT SURVEY

- GAIN funded - National survey statistics on coverage, consumption and quality of fortified staples; In collaboration with NBS, IHI, and CDC (USA)
- 70 EAs (40 district), 1050 HH with WRA nationally, urban/rural
- Coverage: Consumption of a staple, fortifiable staple, fortified staple

- Key Findings:

Wheat flour consumption 51.5% (similar for oil, salt), lower for maize 36.6%

Fortified food consumption; oil = 53.6%, wheat 33.%, maize 2.5%, salt 69.6%

Varied fortification quality nationally; oil 16.3%, wheat 18.9%, maize 3.3%, salt 45% adequately fortified

Estimates iron, Vit. A and iodine contribution to RNI for WRA nationally (urban / rural)

HANU

To improve nutrition and health in children and women in rural Tanzania (Rufiji), through integrated, gender sensitive agriculture nutrition and health interventions

Explore use of AEWs assisted by CHWs for providing health and nutrition education in rural Tanzania

To examine the study's effectiveness in increasing (Vegetable consumption, dietary diversity, adoption of health practices and women's empowerment)

Methods: cluster randomized, 10 paired villages (5 intervention, 5 control)

Approx. 100 HH per village (1007 HH with WRA 18-49 years)

HH identified using IHI's DSS

Phase one, completed, analysis ongoing and phase two to start soon

NUTRITION AND DIETARY TRANSITION

Dar Urban Cohort: (location Ukonga, peri-urban, cohort size > 95,000

- NCDs / Hypertension: Prevalence and determination of high Blood Pressure; Barriers in diagnosis and treatment

Dodoma DSS: (Bahi and Chamwino) : 5266 HH, approx. 23,875 individuals

- - Exploration of factors that affect dietary diversity and malnutrition in Dodoma

LESSONS

INTERVENTIONS

Supplements:

From Evidence to Operationalization / Implementation

Further questions: e.g. scale up, delivery platforms, potential interactions, costs etc

Fortification: alternative vehicles, delivery approaches – small scale,

Agriculture / Home stead food production:

Production alone not enough, other pathways – income, markets, women empowerment, WASH

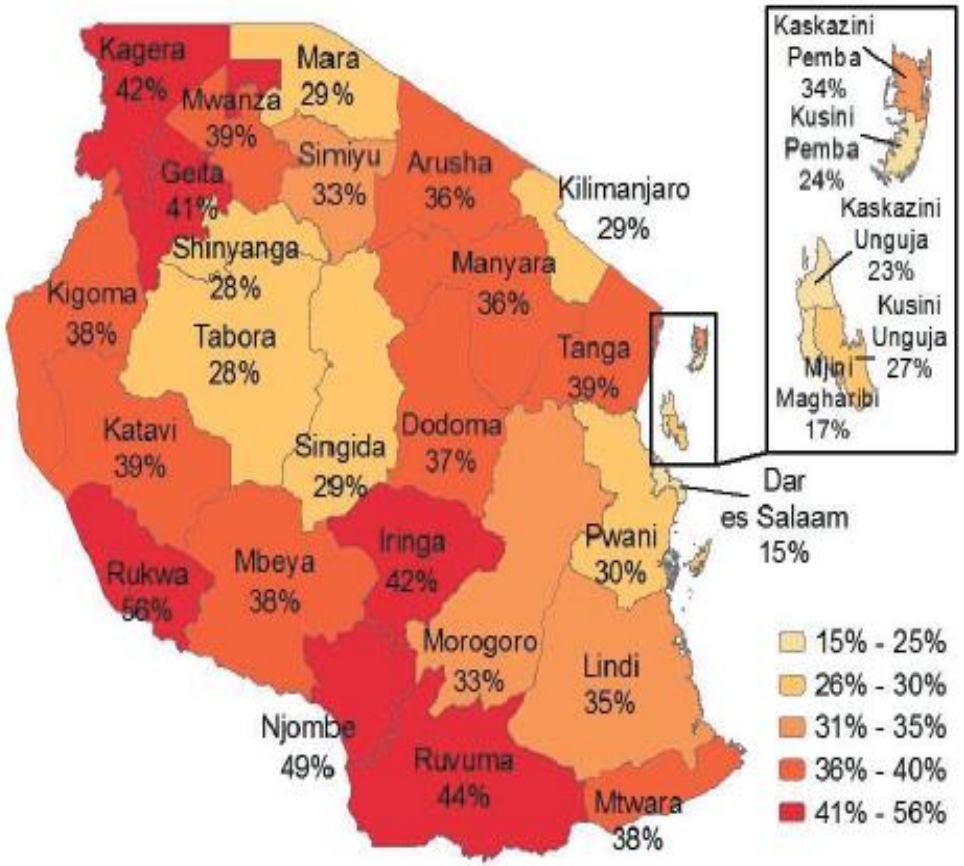
RESPONDING TO TRENDS AND CHALLENGES

- Double burden: > 2.7 million < 5yrs stunted, approx. 600,000 acute malnutrition, increasing overweight and NCDs
- Variations: 10 regions accounting for 58% of all stunted, 5 regions account for half of SAM cases
- Undernutrition higher among the poorest quintile, also higher among boys
- Poor progress on various indicators: e.g. coverage of IFA approx. 9%
- high levels of anemia: among women 45% overall (57% pregnant women, 46% breastfeeding mothers); children 6mo to 5 yrs approx. 58%
- etc

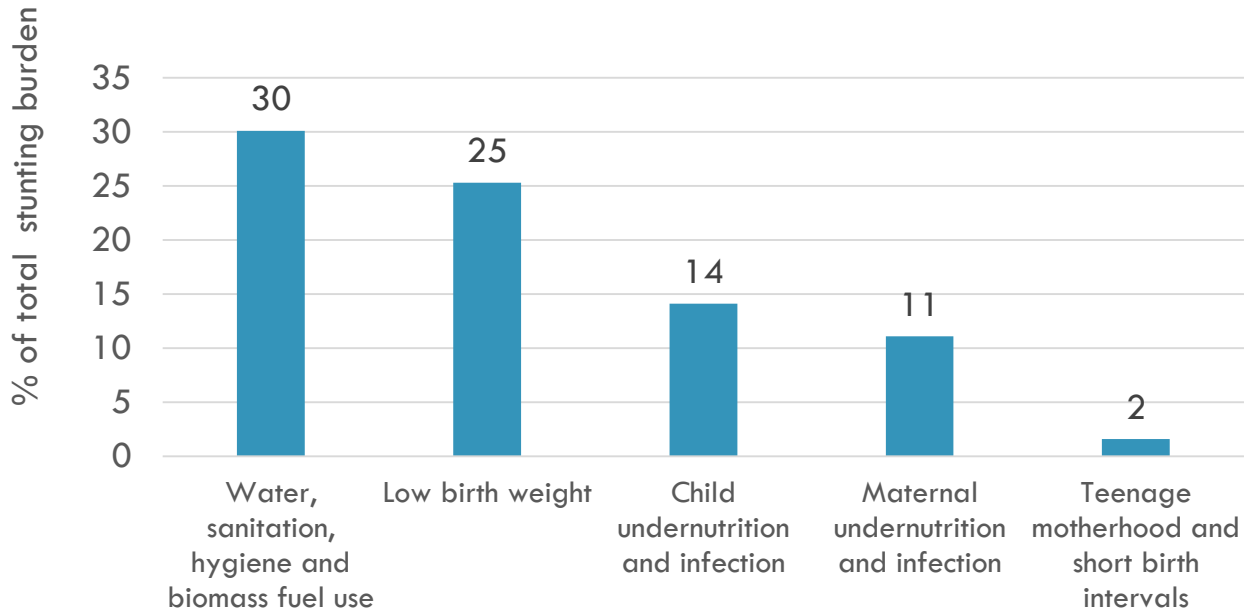
Requires integrated interventions BUT also CONTEXT

ATTRIBUTION AND CAUSALITY IS COMPLEX

- Prevalence of stunting among children under five is high and varies by region.



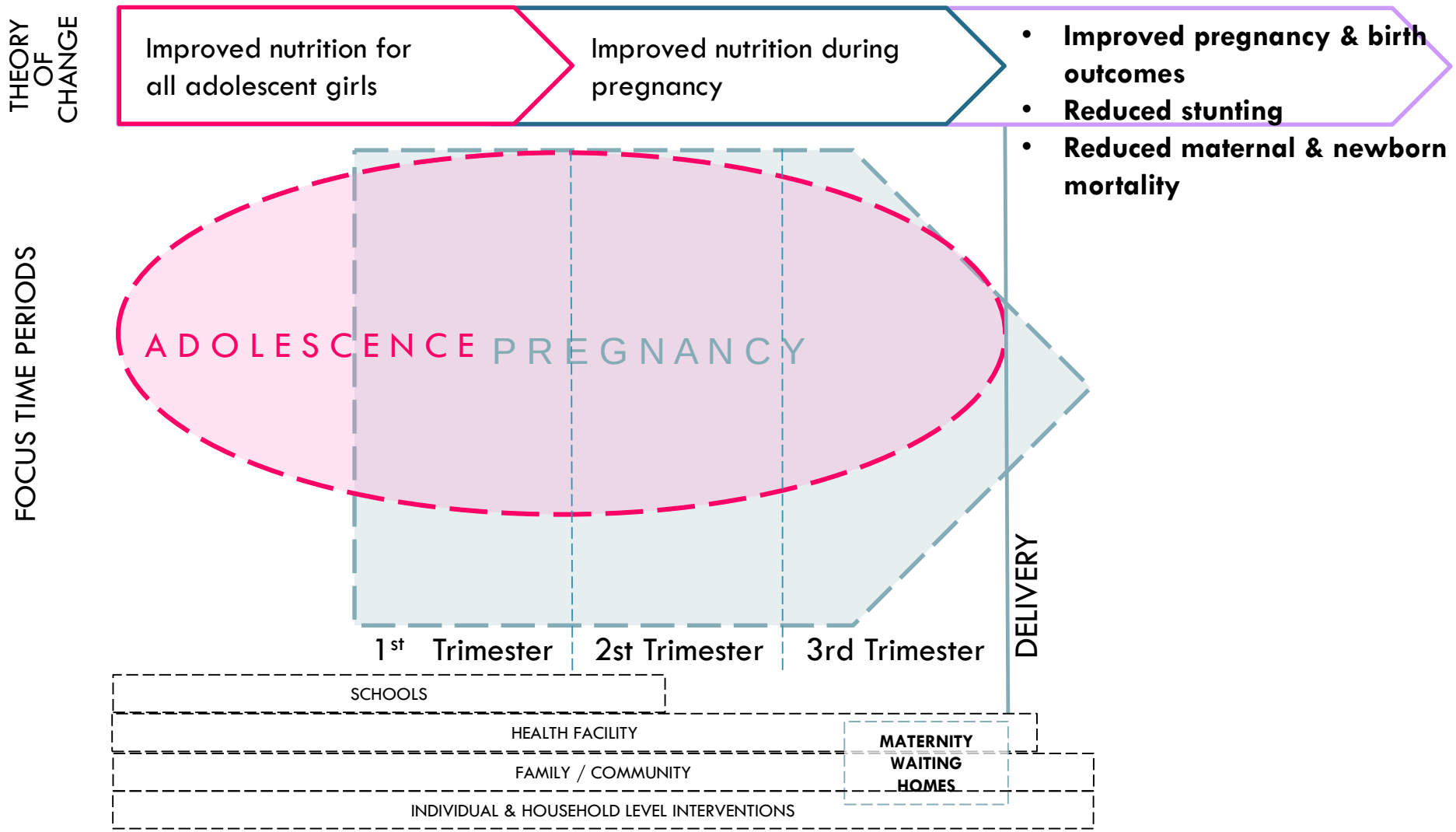
- Population Attributable Fraction: Total burden of stunting (2y) associated with each factor in Tanzania



NNS 2014, Lee 2016

INTERVENING EARLY

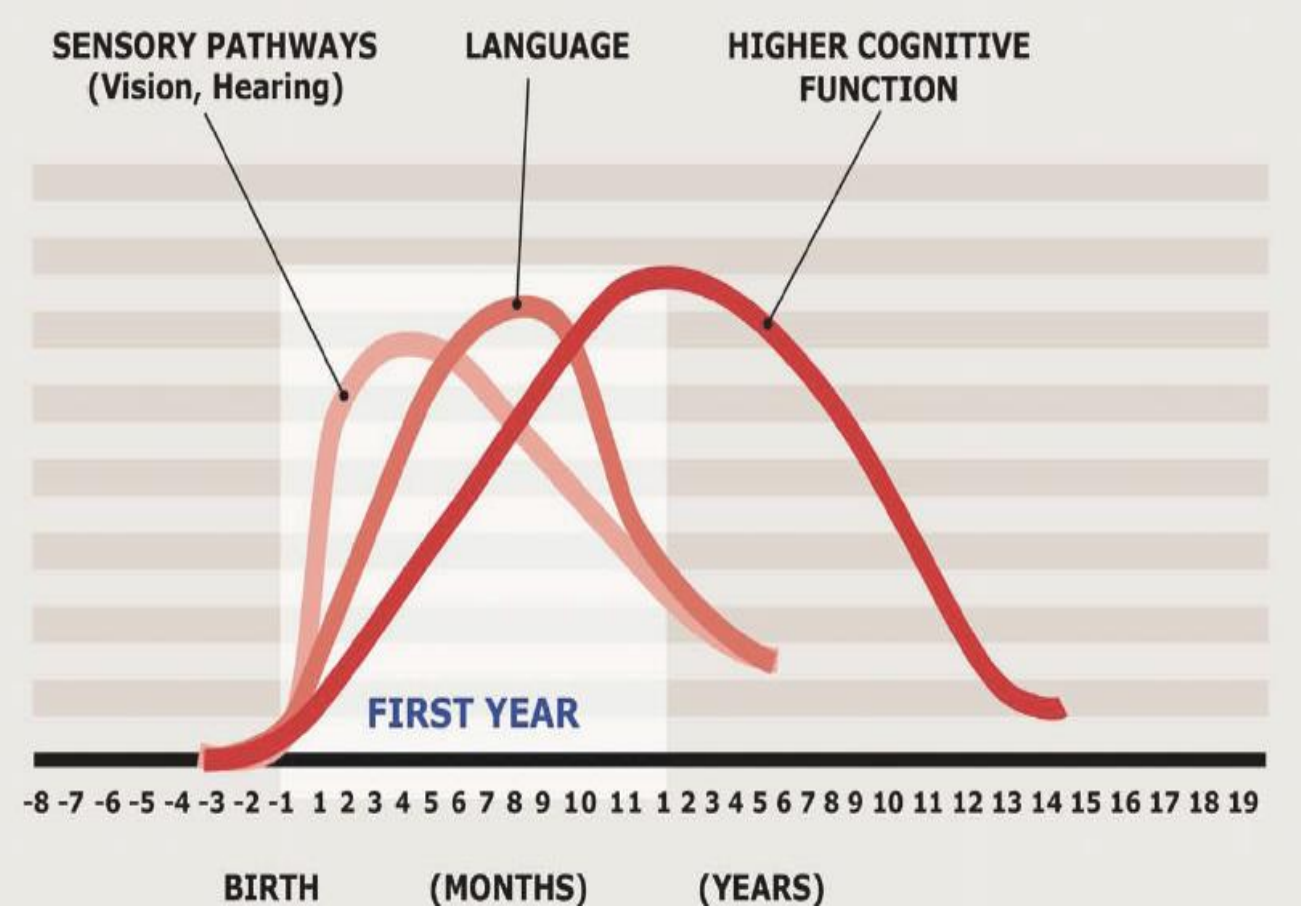
Adolescent girls are a critical population in efforts to reduce maternal and newborn mortality and stunting

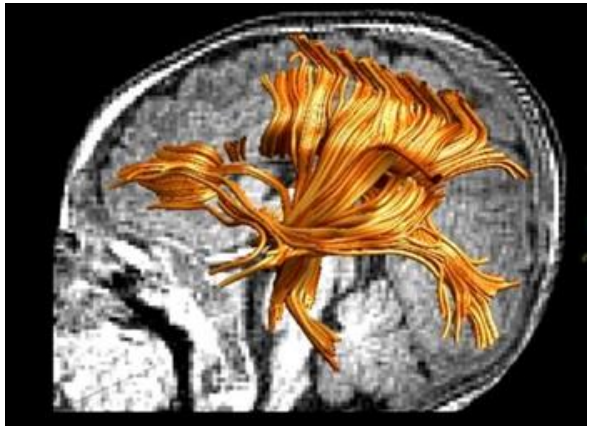


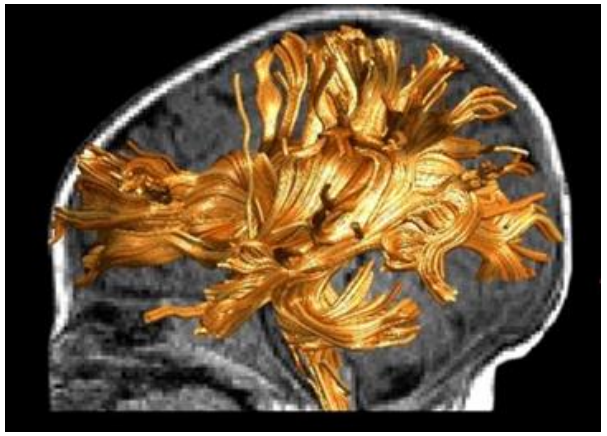
Beyond good health and nutrition for the next generation, nutrition for adolescents is also important for their own health and potential and for being a good parent

INVESTING IN EARLY YEARS BEYOND NUTRITION: EARLY CHILD STIMULATION AND COGNITIVE DEVELOPMENT

Early childhood is a highly sensitive period for brain development







Source: C. Nelson, in From Neurons to Neighborhoods, 2000

GOING FORWARD – PRIORITY AREAS

Priority areas:

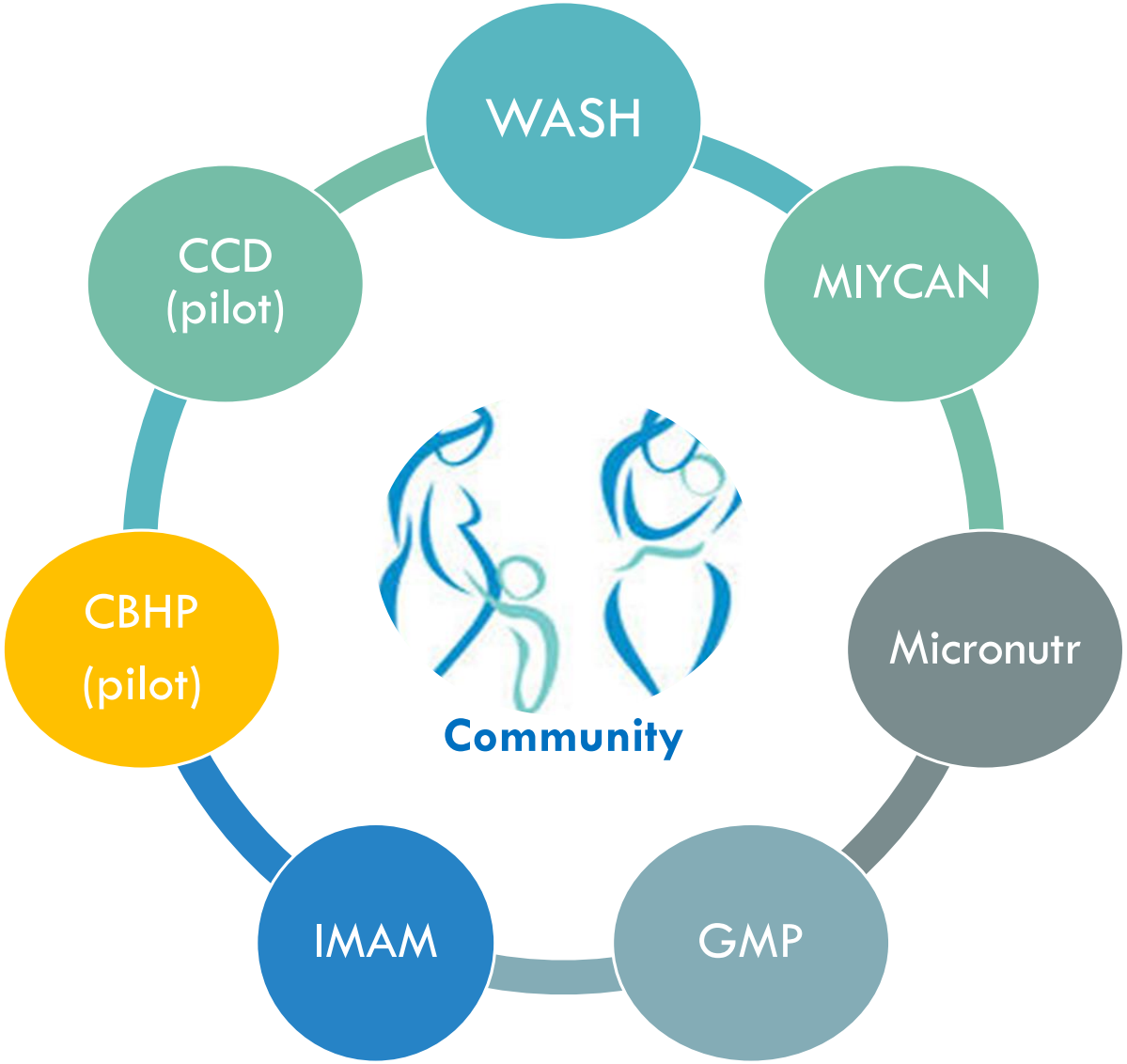
1. Community interventions
2. Behavioral Strategies
3. Food security interventions

Enabling Environment:

1. Better governance of nutrition research (integration in dev. Programs)
2. Alignment of nutrition research and local priorities (NMNAP)
3. Capacity Development (Nutrition research competence)
4. Enhanced information system & Communication (translation)

Developing a Sustainable Nutrition Research Agenda in Sub-Saharan Africa—Findings from the SUNRAY Project, Lachat et al 2014

SUPPORTING NMNAP



Priority areas

Complex integrated packages (what works, economics of scale)

CROSS CUTTING AREAS